

## Patent Abstracts of Japan

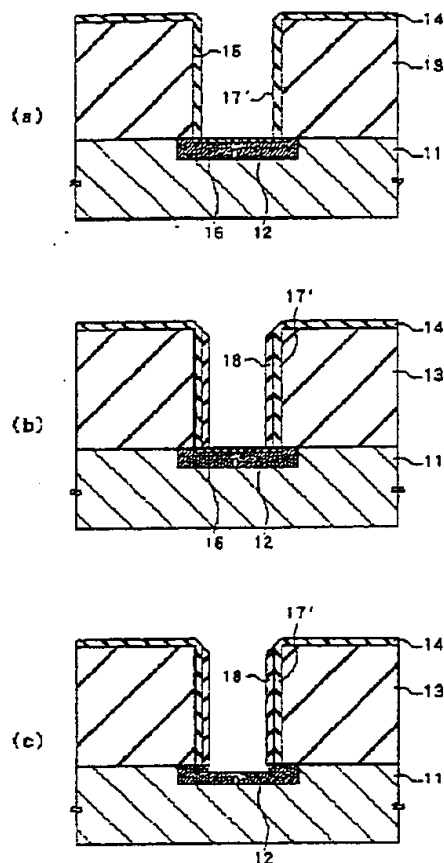
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TITLE : MANUFACTURE OF  
 SEMICONDUCTOR DEVICE



ABSTRACT : PROBLEM TO BE SOLVED: To provide a method for manufacturing a semiconductor device which has a high contact characteristic and high reliability.

SOLUTION: A silicon nitride film side wall 17' is formed as a protection layer on an inner side face of a contact hole 15 (a). After that, a silicon oxide film side wall 18 is formed as a dummy layer on the silicon nitride film side wall 17' (b). Under this condition, a silicon carbide layer 16 which has been deposited on the bottom of the contact hole 15 at the time of etching for forming the contact hole 15 is removed by CDE, an isotropic etching (c). Next, the silicon oxide film side wall 18 is removed and an undercut which has been formed at the time of isotropic etching is eliminated and then the contact hole 15 is filled with a metal layer (barrier metal layer or tungsten layer). Since the undercut is eliminated and the contact hole 15 is completely filled, the peel-off of the metal layer due to the concentration of stress in the contact hole 15 and the deterioration in reliability in wiring due to water can be prevented.

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